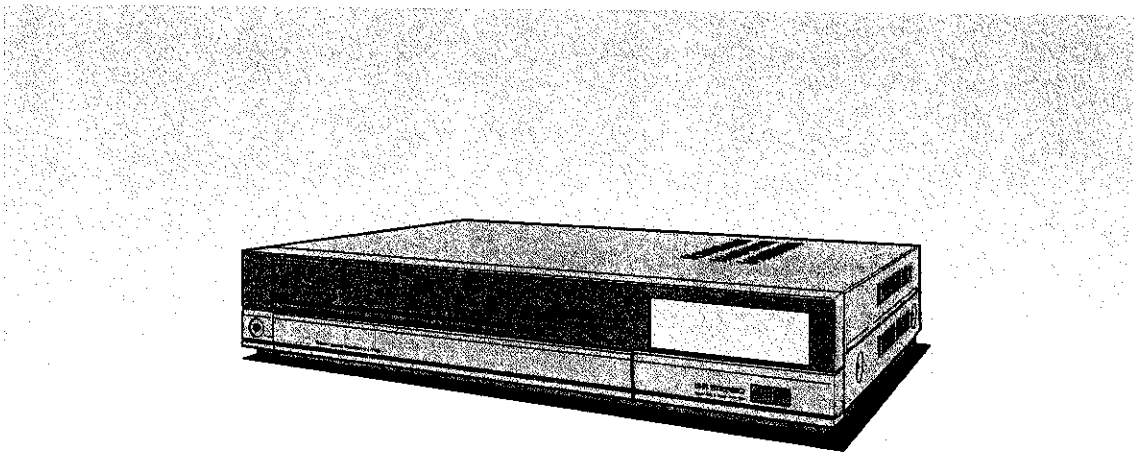
Operating Instructions

VHS PAL Hi-Fi HQ

Video Cassette Recorder

NV-H65 Series



National

Before attempting to connect, operate or adjust this product, please read these instructions completely.

VQT2140

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IMPORTANT

Your attention is drawn to the fact that recording of pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

WARNING

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

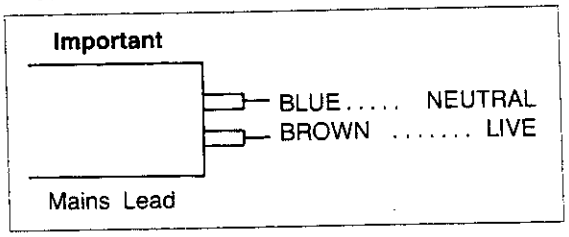
NV-H65A: Australian model
NV-H65EA: New Zealand model
NV-H65BA: South African model

is the safety information.

FOR YOUR SAFETY

■ **DO NOT REMOVE OUTER COVER.**
To prevent electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

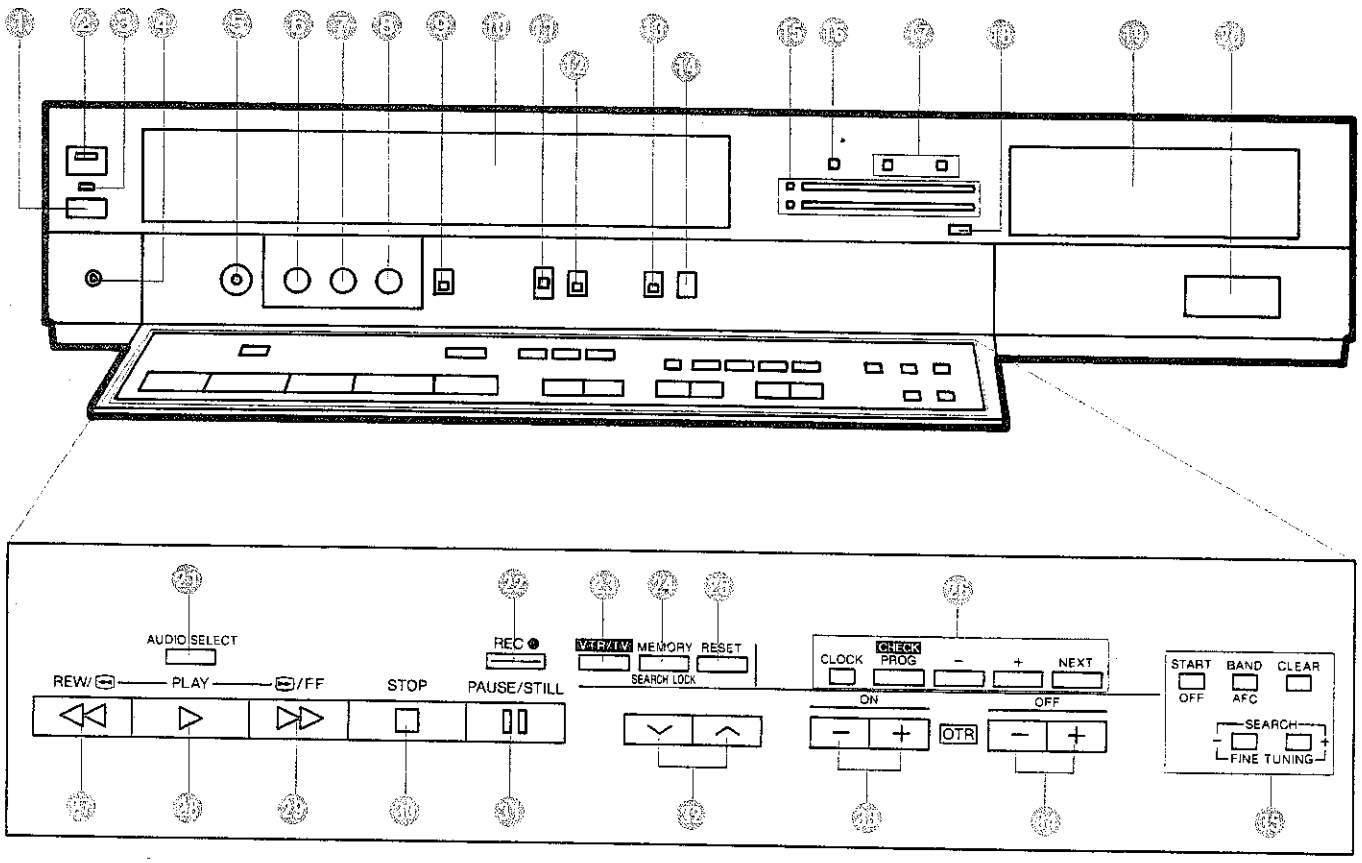
■ **AC MAINS LEAD CONNECTION. (NV-H65BA)**
The wires in the mains lead of this apparatus are coloured in accordance with the following code.



As the colours of the wires in the mains lead may not correspond with the coloured markings identifying the terminals in your plug proceed as follows: The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK. The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

CONTROLS AND COMPONENTS

FRONT



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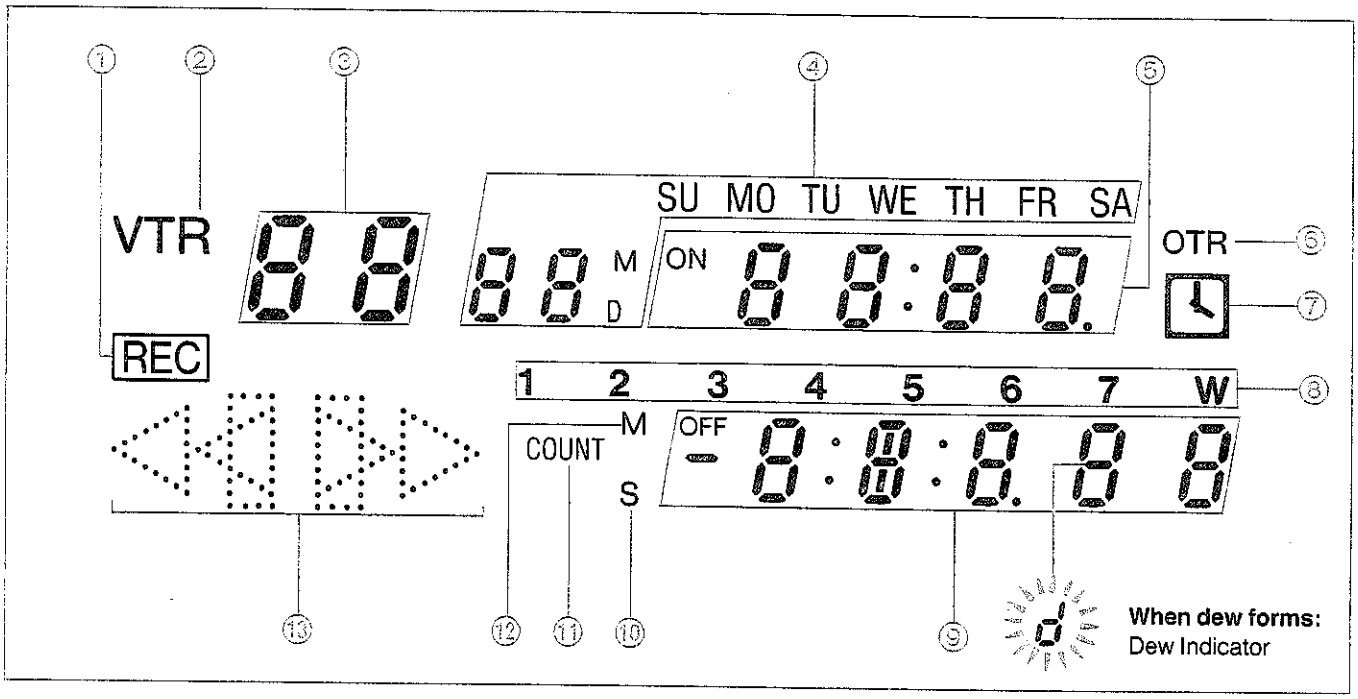

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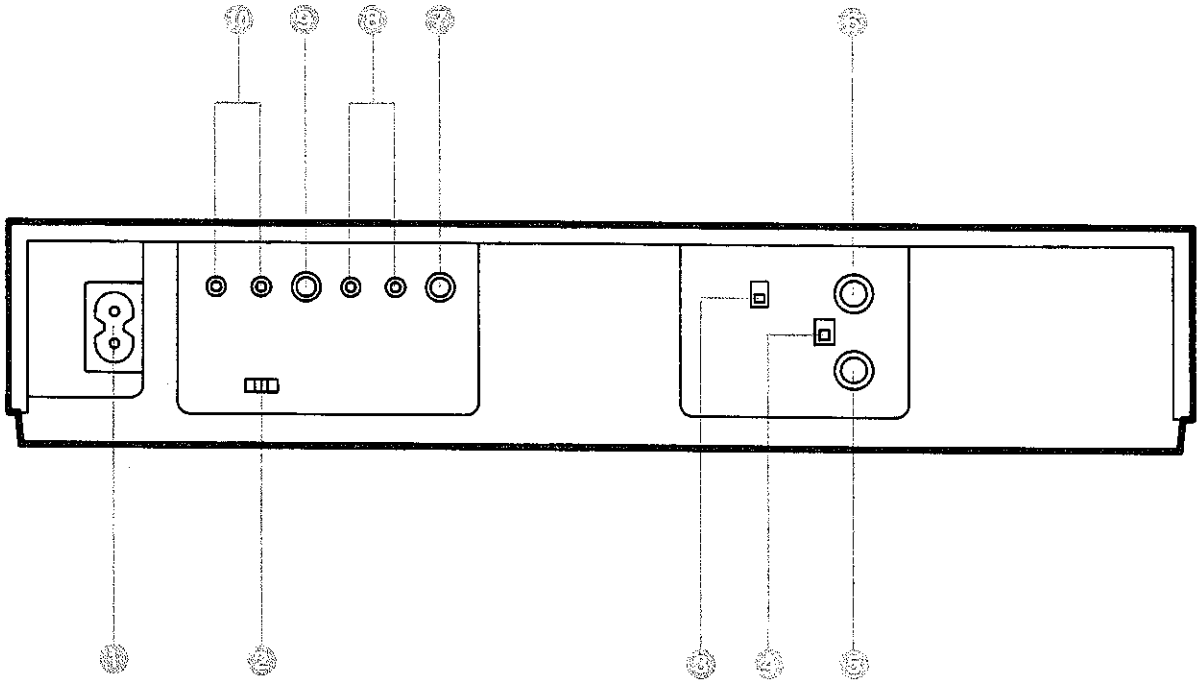

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FEATURES

The revolutionary newly developed hi-fi stereo recording system features two rotary audio heads arranged on the video head cylinder and an FM conversion recording method. The result of this innovative system is superb sound quality with a dynamic range of 90 dB, wide frequency response from 20 Hz to 20 kHz and 0.005% wow and flutter.

The excellent audio quality, outstanding tape economy, continuous 4-hour audio recording capability and Audio Rec Level Meter make this VTR ideal for use as a top-quality audio cassette recorder.

This VTR allows recording and playback of the stereo sound of TV programmes broadcast via "Simulcast" by connecting an FM tuner to the Audio Input Sockets.

The new Hi-Fi stereo system in combination with the built-in multiplex tuner can process audio two-channel as well as monaural signals for both recording and playback. Even if the TV set used is of the mono type, stereo or bilingual sound of recorded programmes or sound of TV programmes, being received on the VTR tuner and played back through the TV set can be reproduced via a connected hi-fi stereo system with external speakers.

The built-in tuner in this VTR allows pre-tuning of as many as 16 TV stations. So this VTR can accommodate virtually any increase in available TV programmes in the future.

Whenever an operation button is pressed, the activated function is immediately indicated on this easy-to-see display. It shows you at a glance, in what operation mode the VTR is functioning.

The new Lap Time Counter is a great improvement over the approximate counter systems of conventional VTRs. It gives you an exact reading of the elapsed tape time in hours, minutes and seconds, and makes it easy to calculate the tape time left on a cassette. (up to ±4:00.00)

This unit is equipped with an Automatic Voltage Selector. The unit can be used where the local voltage indication is between 110–240 V, without any manual voltage adjustment.

This highly functional design allows loading the video cassette from the front, thus minimizing the space required for the placement.

The clock/timer of the NV-H65 is programmed with the calendar up to the end of 2001, so it knows exactly what day of the week it is on any given date. Programming of as many as 8 timer recordings is possible up to one month in advance.

This VTR automatically turns itself on when a video cassette is inserted even if it was turned off. When the tab of the inserted cassette is broken out, playback will start automatically. Also, even if the VTR is off when the Eject Button is pressed, it automatically turns itself on to eject the cassette tape and it turns itself off again.
When a video cassette tape with a broken out tab is inserted and the VTR is switched over to recording, OTR or timer recording, the cassette tape will be automatically ejected.
When the tape reaches its end (except during OTR and timer recording), it will automatically rewind to the beginning.
If the VTR On/Off button is pressed during the rewind mode including Auto Rewind, the VTR will eject the cassette and turn itself off when rewinding is completed.

Super Still, Super Still Advance and Super Fine Slow Playback are possible with superb picture quality with minimum noise and jitter.

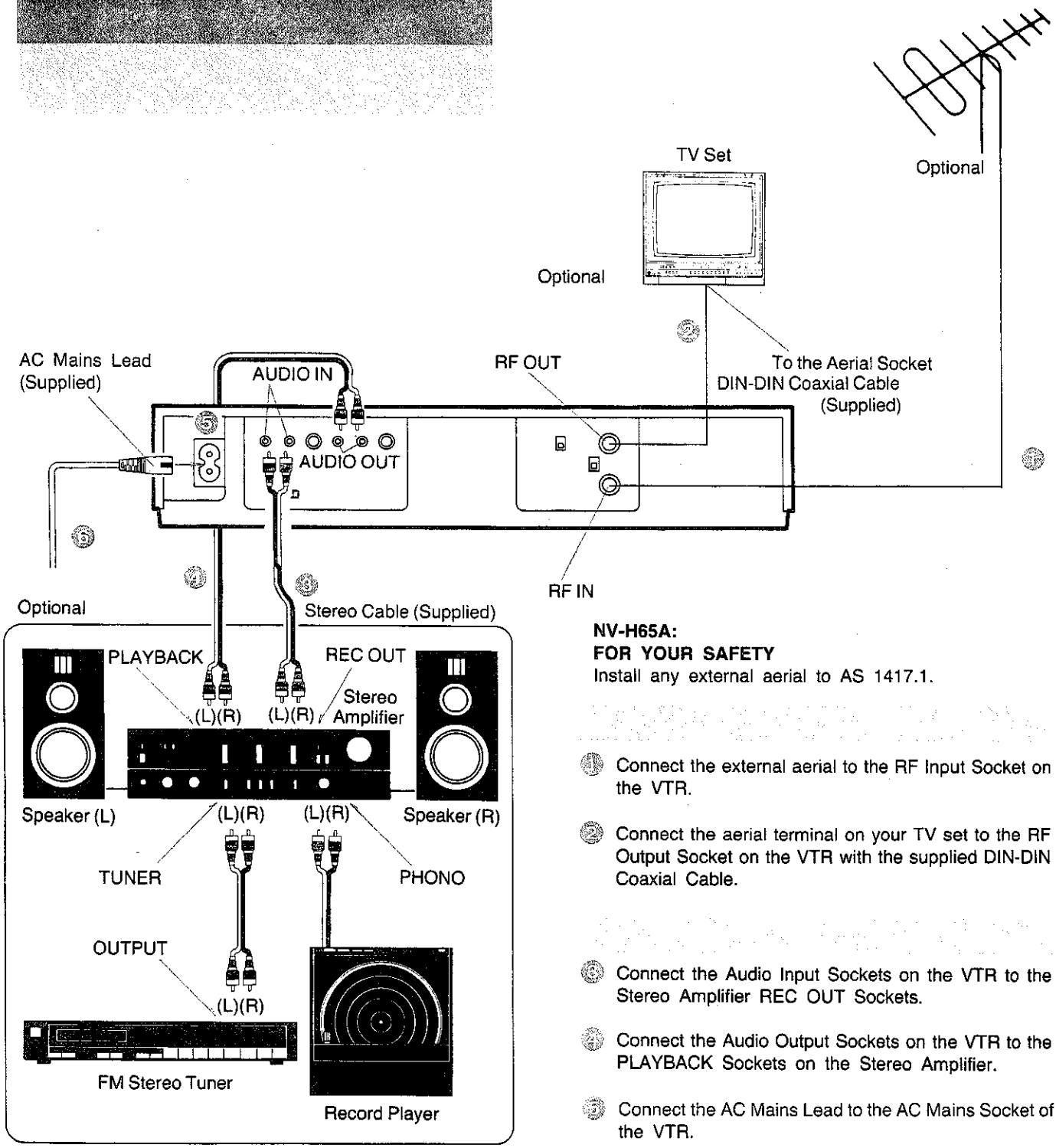
This convenient function makes it possible to easily programme the VTR for recording of TV programmes with immediate start or with start within 24 hours and with the starting time and ending time precisely set to the desired minute. When the recording ends, the VTR will automatically turn itself off.

In addition to letting you control all major VTR functions, this handy Remote Controller also lets you programme timer recordings from the comfort of your armchair.

Video recorders carrying the HQ symbol mark feature the new VHS High Quality Picture System. This system assures complete compatibility with VTRs that use the conventional VHS system.

INSTALLATION

•When listening to a radio while the VTR is in operation, the radio reception may be distorted. In this case, move the radio away from the VTR.



NV-H65A:
FOR YOUR SAFETY
Install any external aerial to AS 1417.1.

① Connect the external aerial to the RF Input Socket on the VTR.

② Connect the aerial terminal on your TV set to the RF Output Socket on the VTR with the supplied DIN-DIN Coaxial Cable.

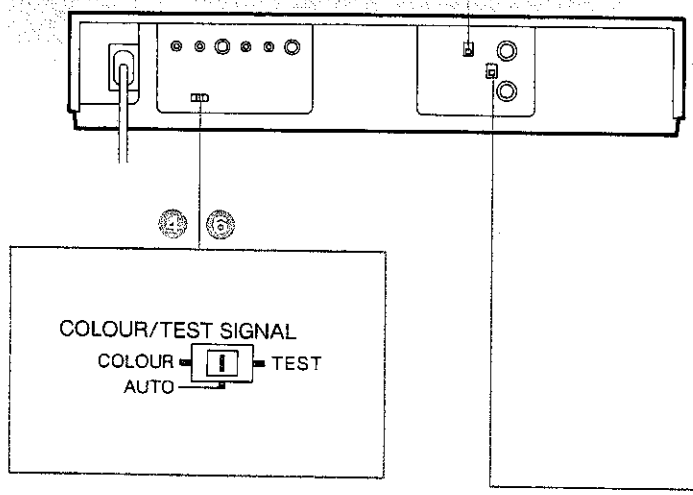
③ Connect the Audio Input Sockets on the VTR to the Stereo Amplifier REC OUT Sockets.

④ Connect the Audio Output Sockets on the VTR to the PLAYBACK Sockets on the Stereo Amplifier.

⑤ Connect the AC Mains Lead to the AC Mains Socket of the VTR.

⑥ Connect the AC Mains Lead to the mains outlet.

TUNING THE TV SET TO THE VIDEO PLAYBACK CHANNEL

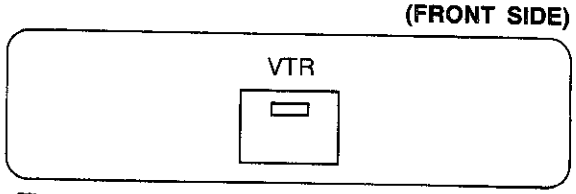


RF Converter Channel Selector. (NV-H65A, EA)
This switch is used to select the RF channel which is not occupied with any TV station. (NV-H65A: 0 or 1; NV-H65EA: 2 or 3.)

RF Signal Level Switch:
Used to attenuate the reception of the VHF and/or UHF aerial signals. If the reception is normal, set to "HIGH". If the signal is strong (stripes appear in the upper part of the picture), set to "LOW".

① Turn the TV set on and select the AV programme position or another programme position that is not occupied by any TV station.

② Press the VTR On/Off Switch to turn the VTR On.
(FRONT SIDE)

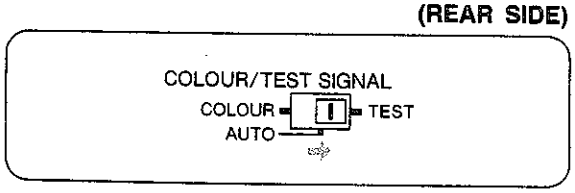


•The corresponding indicator lights up.

③ Press the VTR/TV Selector to "VTR" position.
The NV-H65BA is not equipped with this selector.

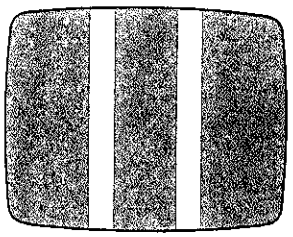
•VTR Indicator will appear in the Multi-Function Display.

④ Set the Colour Mode/Test Signal Switch to "TEST".
(REAR SIDE)



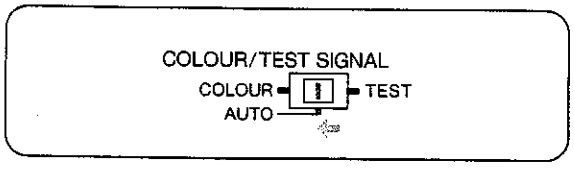
⑤ Tune the selected programme position (channel) of the TV set to the VHF or UHF channel shown below for your model. Confirm on the TV set that the received test pattern is as shown below.

NV-H65A	VHF channel 0 or 1*
NV-H65EA	VHF channel 2 or 3
NV-H65BA	UHF channel 36



NV-H65A only
*In some areas channel 0 may be used by local TV station. In this case switch to channel 1.

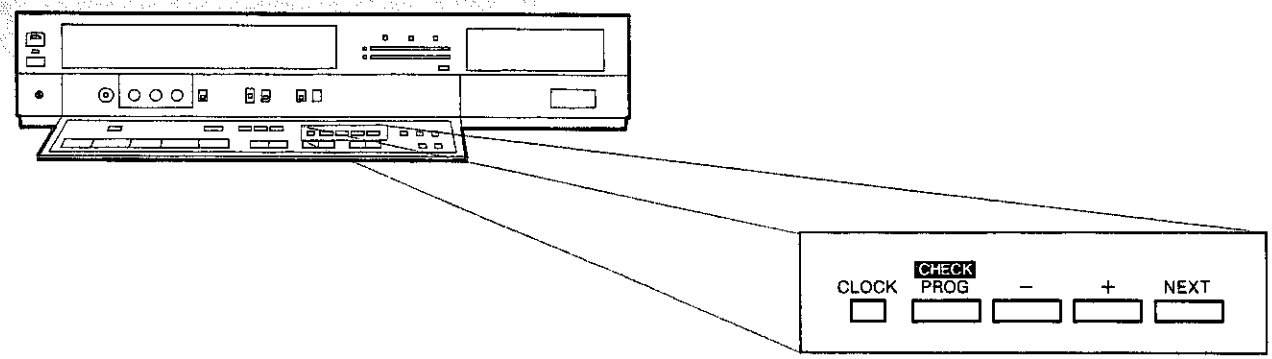
⑥ Set the Colour Mode/Test Signal Switch to "AUTO". Your TV is now ready to receive the RF output signal from the VTR.



•If, during recording or playback, the colour is not satisfactory, it can be stabilized by setting Colour Mode/Test Signal Switch to COLOUR.

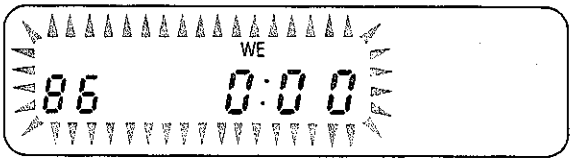
SETTING THE CLOCK TO THE PRESENT TIME

The built-in digital clock employs the 24-hour system.



- Connect the VTR to the mains outlet.
- Press the VTR On/Off Switch to turn the VTR On.
- Press the Control Panel Open Button.

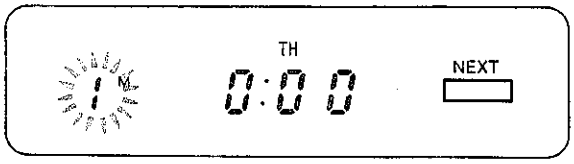
① When connecting this VTR to the mains or after a long power failure, both the date and time indications flash.



② Press the Clock Button to start the date and time setting.

③ Press the (+) or (–) Button to set the year.

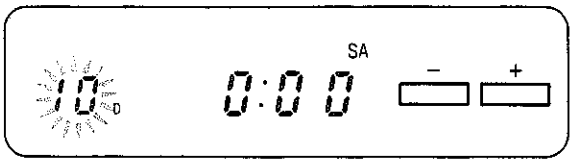
④ Press the Next Button.



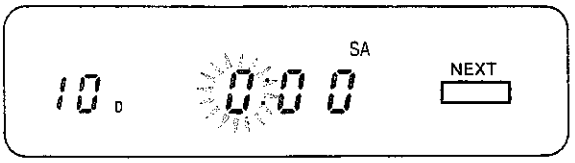
⑤ Press the (+) or (–) Button to set the month.

⑥ Press the Next Button.

⑦ Press the (+) or (–) Button to set the day.



⑧ Press the Next Button.



The present time is displayed continuously even if the VTR is turned off.

Power Back-up System:

In case of a power failure, the back-up system retains the present time memory for about 60 minutes. However, it takes more than one hour for the back-up circuit to become operational, after the VTR has been connected to the mains.

⑭ Press the (+) or (−) Button to set the hour.

⑮ Press the Next Button.

⑯ Press the (+) or (−) Button to set the minute.

⑰ Press the Clock Button when the present time becomes exactly 12:35'00".

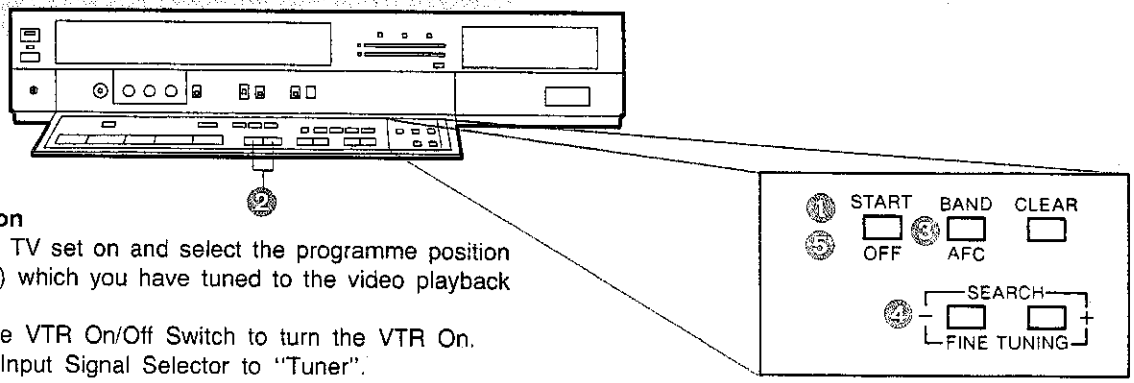
Button	How the Indication Changes
CLOCK	This Button is used to start and finish the time setting.
CHECK PROG	Unnecessary for Time setting
YEAR Mode + −	1986→1987...2000→2001 1986→2001...1988→1987
MONTH Mode + −	1→2→3.....10→11→12 1→12→11..... 4→3→2
DAY Mode	JAN. MAR. MAY. JUL. AUG. OCT. DEC.
+	1→2→3...29→30→31
−	1→31→30...4→3→2
	APR. JUN. SEP. NOV.
+	1→2→3.....29→30
−	1→30→29.....4→3→2
	FEB.
+	1→2→3...27→28 or 29
−	1→29 or 28→27...3→2
HOUR Mode + −	0→1→2→3...21→22→23 0→23→22...3→2→1
MINUTE Mode + −	00→01→02.....57→58→59 00→59→58→57...02→01
NEXT	YEAR→MONTH→DAY→HOUR→MINUTE

SETTING THE TUNER IN THE VTR

The tuner in the VTR makes it possible to receive TV broadcasts and to record these programmes without having to turn on the TV set. The reception channels in the TV bands shown on the right can be received.

	VHF		UHF
	I	III	U
NV-H65A	0–5	5A–11	21–69
NV-H65EA	1–3	4–11	21–69
NV-H65BA	———	4–13	21–68

The tuner in the VTR can be preset up to 16 stations.



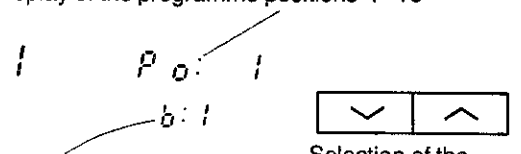
Preparation

- Turn the TV set on and select the programme position (channel) which you have tuned to the video playback channel.
- Press the VTR On/Off Switch to turn the VTR On.
- Set the Input Signal Selector to "Tuner".
- Press the VTR/TV Selector to "VTR" position. For the NV-H65BA no selector is fitted.

① Press the START/OFF Button.
The indication on the Multi-Function Display changes from the clock indication to the position indication.

② Press the Channel Up or Down Button to select a programme position (channel) which you want to tune to a TV station.

Display of the programme positions 1–16

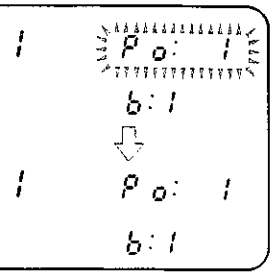


③ Press the BAND/AFC Button to select the "I" (NV-H65A, EA), "III" or "U" position.

④ Press the SEARCH (+) or (−) Button.

During the station search (The position indication flashes on and off.)

Tuned condition/ When a station is tuned



- When the tuning of the station is completed, the indication stops flashing and the tuned station is automatically memorized.
- At every push of the SEARCH (−) or (+) Button, the station will be tuned automatically.

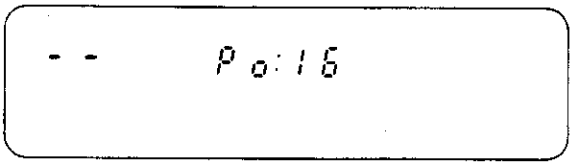
Repeat steps ②~④ for each channel you want to tune to a station.

⑤ Press the START/OFF Button again.
The indication on the Multi-Function Display changes to the clock indication.

① Press the START/OFF Button.

② Press the Channel Up or Down Button to select a programme position (channel) which you want to tune to a TV station.

③ Press the CLEAR Button ("– –" will be displayed in the Programme Position Indication).



- Repeat steps ② and ③ for all programme positions on which no stations are to be tuned. Afterwards, these programme positions will be skipped during Up/Down selection of the programme position.

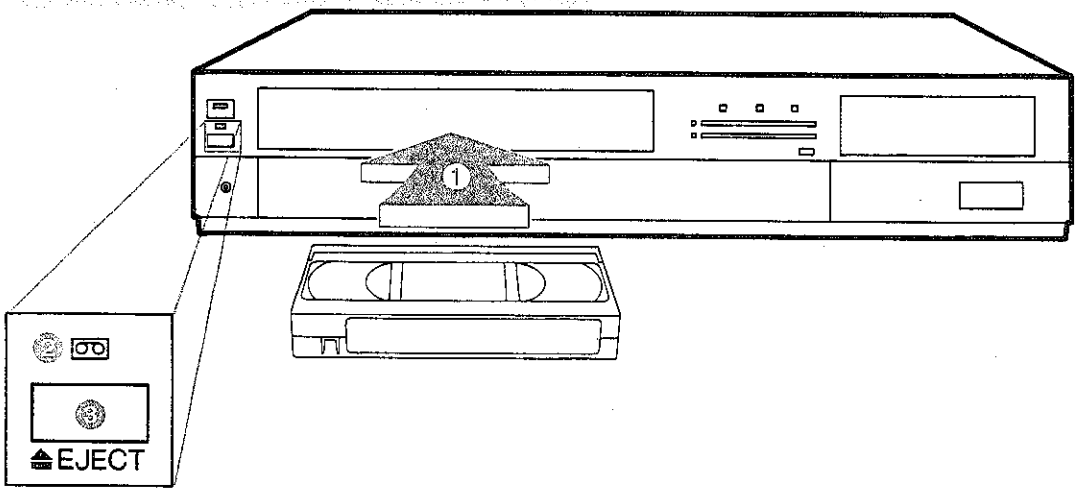
④ Press the START/OFF Button again.

If fine tuning is necessary, for example for a weak station which is close to a strong station:

1. Make sure that the START/OFF Button is in the Off condition, i.e. the Multi-Function Display shows the present time.
2. Press the FINE TUNING "−" or "+" Button to obtain the best tuning condition.

- To return the tuning to its former state, press the BAND/AFC Button.

THE VIDEO CASSETTE



1. Insert the video cassette as shown. The VTR will be turned on automatically and the cassette will automatically be drawn into the VTR.

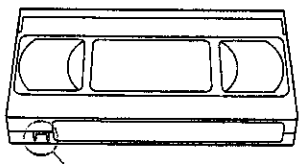
2. When a video cassette is inserted, the "⊙⊙" indicator will light up.

Note:

- When a video cassette with broken out erasure prevention tab (for example a pre-recorded tape) is inserted, playback will start immediately.
- Use VHS video cassette tapes only.

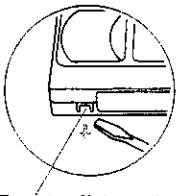
3. Press the Eject Button (⏏).

Even if the VTR is off, the VTR automatically turns itself on when the Eject Button is pressed, and the cassette tape is ejected. After that, the VTR will turn itself off again.



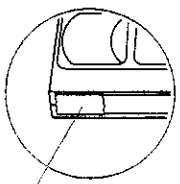
Erasure Prevention Tab

To prevent accidental erasure



Break off the tab with a screwdriver.

To record again

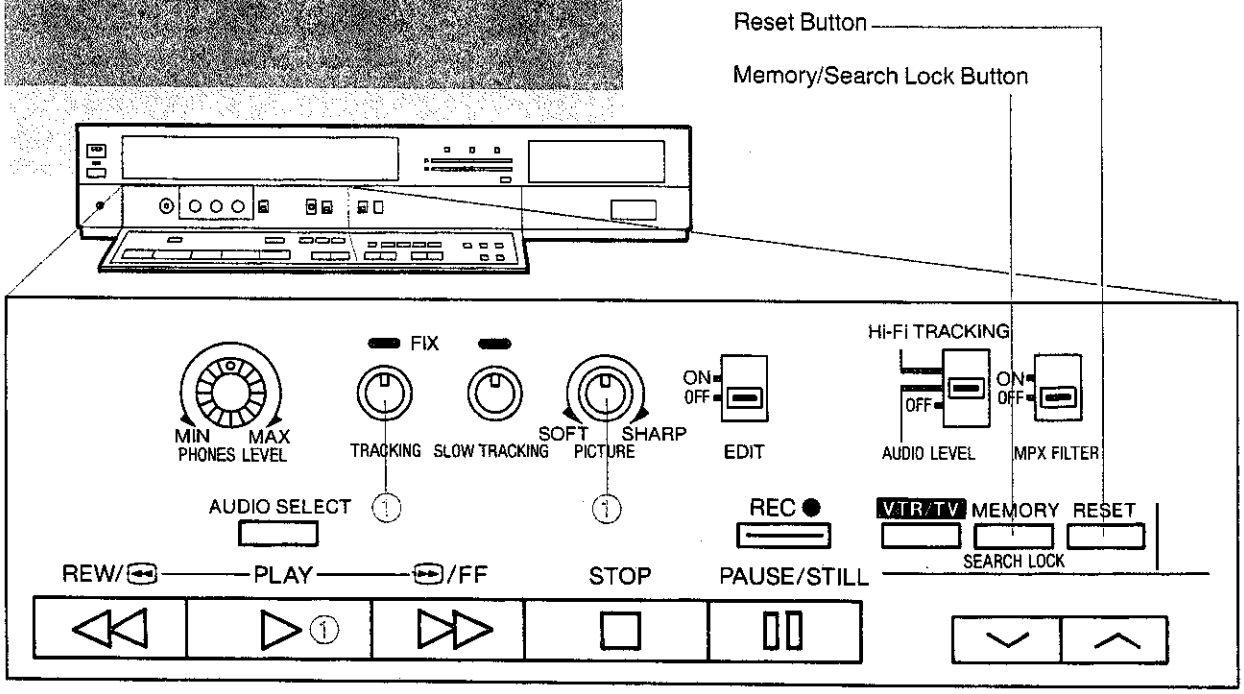


Cover the hole with adhesive tape.

PLAYBACK

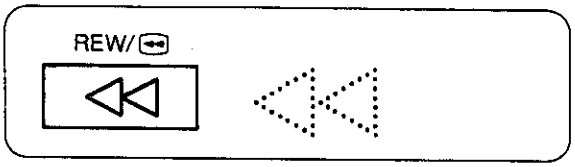
Preparation

- Make sure that the "Timer Record" is not switched On.
- Insert a recorded video cassette.
  When a video cassette is already inside the VTR, press the VTR On/Off Switch to turn it on.
- Turn the TV set on and select the video playback channel.

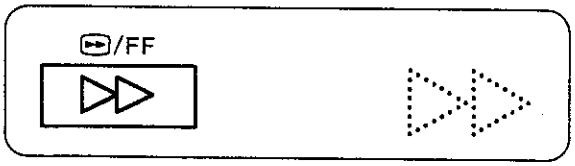


When a video cassette which has the erasure prevention tab removed is inserted, playback will start automatically.

Press the Rewind ◀◀/Review ⏪ Button to rewind the tape.

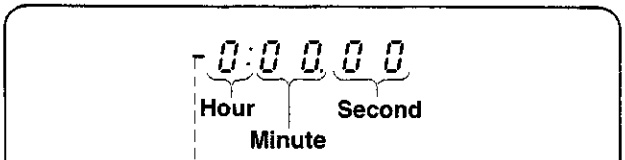


Press the Fast Forward ▶▶/Cue ⏩ Button to wind the tape forward rapidly.



The Memory function makes it simple and fast to find a certain position on the tape later again, simply by pressing the Reset Button at that position to set the tape counter to "0:00.00" and by pressing the Memory/Search Lock Button. During Rewind or Fast Forward, the tape will then stop at approximately the desired position.

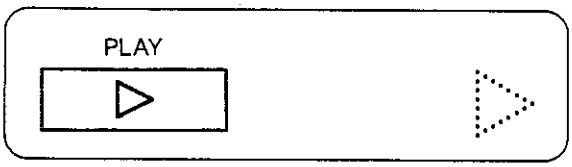
It shows the elapsed recording or playback time.



The "–" indication will appear when the tape is rewound further than the tape counter position "0:00.00".

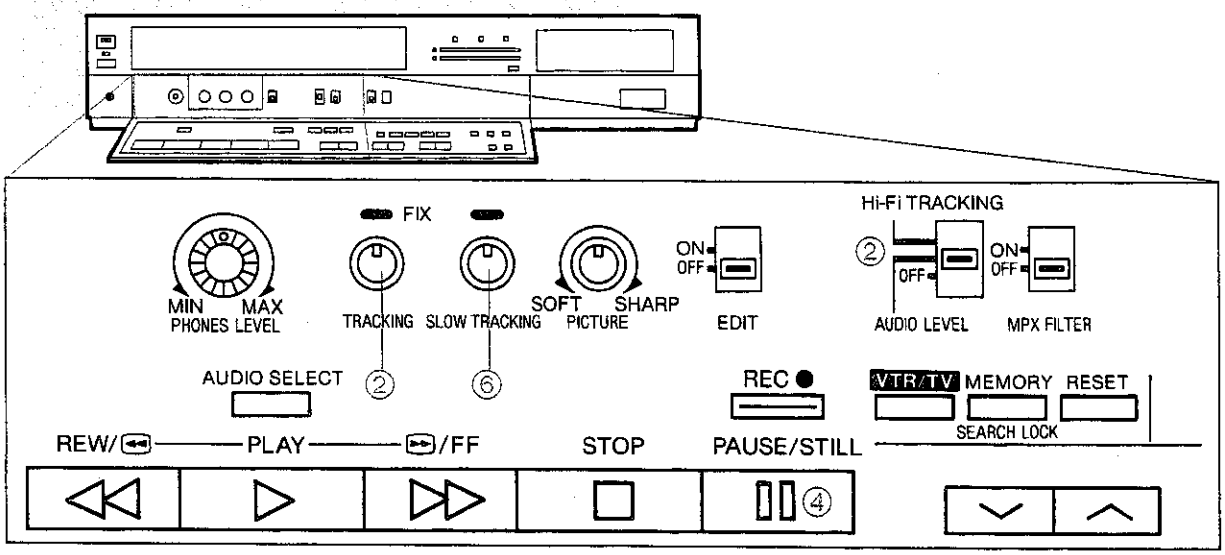
- If the figures on the Tape Counter do not change during Fast Forward, Rewind or any of the playback functions, this means that nothing is recorded on that tape section.
- The Tape Counter is automatically reset to "0:00.00" when the video cassette is ejected.

Press the Play Button (▶).



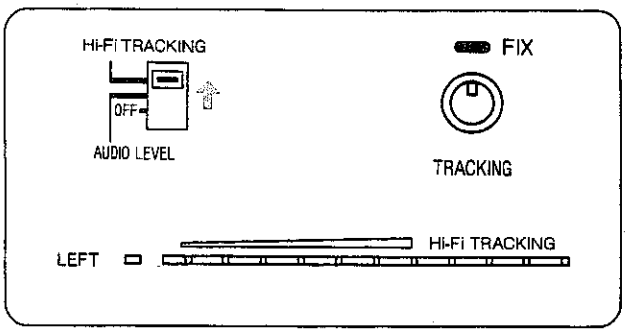
- Adjust the Tracking Control on the VTR if the image is partially obscured by bands of noise.
- Control the picture as you like with the Picture Sharpness Control (sharp or soft contours).

NV-H65EA, BA
When playing back off-air recordings of mono TV Programmes, the "Stereo" indicator in the Audio Playback Mode Indicators will light up, this is only to confirm that the sound is being reproduced from the hi-fi audio tracks and does not infer that the recording is necessarily in stereo.



2

This adjustment may be necessary when playing back a tape which was recorded on another hi-fi VTR.
Set the Audio Level Meter Selector to "Hi-Fi Tracking" and slowly rotate the Tracking Control while observing the Audio Level Meter, for highest possible meter Indication.

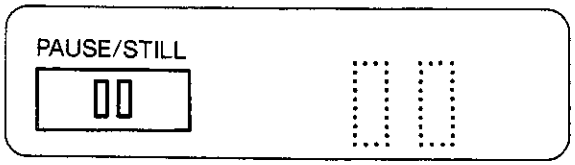


3

When the VTR is in the playback mode, press the Double Speed Playback Button on the Infra-red Remote Controller to view a double speed playback picture. To continue the normal playback, press the Play Button.

4

When the VTR is in the playback mode, press the Pause/Still Button (⏸) to view a super still-picture. To continue the normal playback, press this button again.



5

During still playback mode, press the Still Advance Button (⏭) on the Infra-red Remote Controller. Each time you press this button, the still-picture will advance one frame. A slow motion effect (about 1/17 speed of normal playback) can be obtained by keeping the Still Advance Button (⏭) pressed.

6

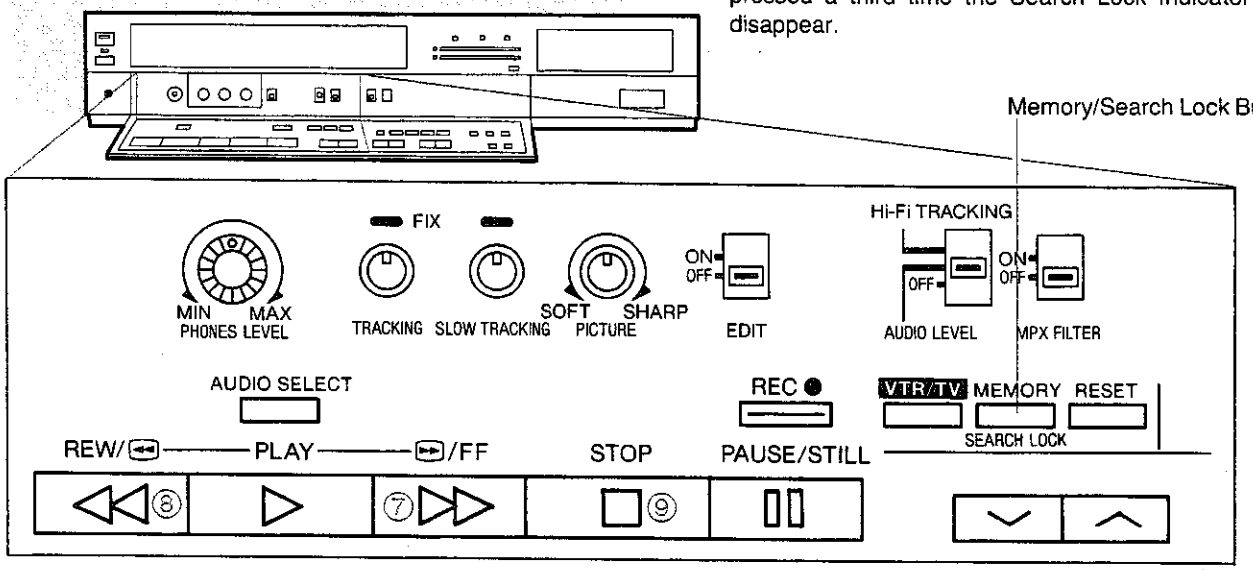
During normal playback, the Slow-motion playback can be activated by pressing the Slow Button (⏩) on the Infra-red Remote Controller. Slow-motion playback between 1/25 and 1/4 of the normal speed can then be obtained by using the Slow (+) or (−) Button.

- Press the Play Button (▶) to continue the normal playback.
- If the Slow playback operation continues for more than 10 minutes, the VTR automatically switches over to the stop mode.
- While playing back a tape in the Super Still or Super Fine Slow playback mode on a TV set equipped with an automatic vertical hold control, the picture may shake vertically. In this case, set the TV set's vertical hold (AUTO/MANUAL) selector to the "MANUAL" position, and adjust the vertical hold control.

Slow Tracking Control

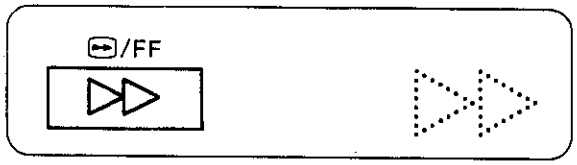
- When noise bars appear during Super Still, Super Still Advance or Super Fine Slow playback, switch over to slow playback and adjust the Slow tracking Control to reduce the noise bars.
- It may not be possible to eliminate the noise bars completely.

Memory/Search Lock Button
When this button is pressed once, the Memory Indicator "M" will light up, and when it is pressed one more time, the Search Lock Indicator "S" will appear instead. When it is pressed a third time the Search Lock Indicator "S" will disappear.



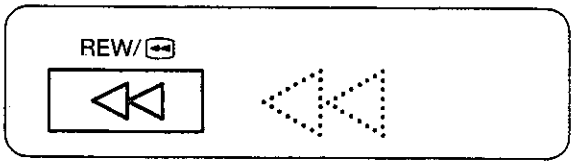
7

When the Fast Forward ▶▶/Cue ⏩ Button is kept pressed while the VTR is in the playback mode, the tape will be played back in forward direction at about 5 times normal playback speed.



8

When the Rewind ◀◀/Review ⏪ Button is kept pressed while the VTR is in the playback mode, the tape will be played back in reverse direction at about 5 times normal playback speed.

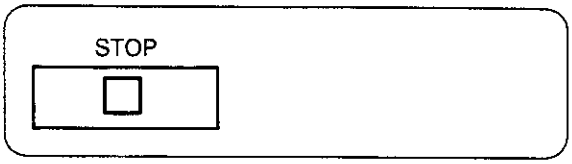


To make possible Cue or Review playback without having to keep the respective button pressed, first press the Memory/Search Lock Button so that the Search Lock Indicator "S" appears in the Multi-Function Display, and then press the Fast Forward ▶▶/Cue Button ⏩ or the Rewind ◀◀/Review ⏪ Button.
To switch the VTR back to normal playback, press the Play Button (▶).

- When Cue or Review playback continues for more than 10 minutes, the VTR switches back to the normal playback mode.

9

Press the Stop Button (■) to stop the playback.

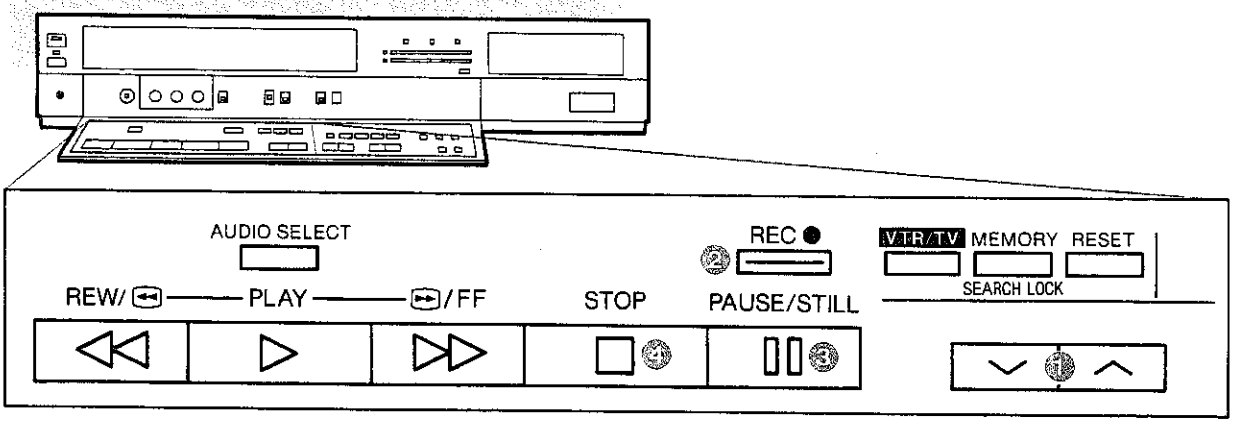


- The sound will be played back only during normal playback.
- If you leave the VTR in the still playback mode for more than 5 minutes, the VTR will automatically switch over to the Stop mode, to protect the tape and the video heads.
- Noise which takes the form of horizontal bars appears on the TV in the Cue and Review playback modes. This is not an indication of a malfunction.
- The top of the picture may become distorted in the Cue or Review mode. This is not an indication of a malfunction.
- When the picture rolls vertically in the Cue or Review mode, adjust the vertical hold control on the TV set.

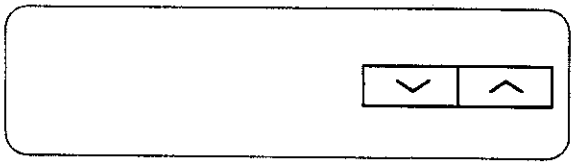
RECORDING FROM A TV BROADCAST SIGNAL

Preparation

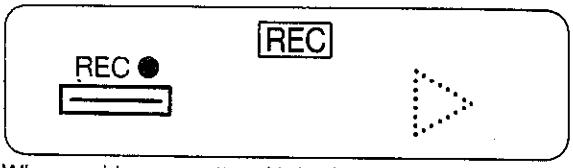
- Insert a video cassette with the erasure prevention tab intact.
  When a video cassette is already inside the VTR, press the VTR On/Off Switch to turn it on.
- Make sure that the "Timer Record" is not switched On.
- Reset the Tape Counter to "0:00.00".
- Set the Input Signal Selector to "Tuner".
- Press the VTR/TV Selector to "VTR" position.
  For the NV-H65BA no selector is fitted.



① Select on the VTR, the programme position (channel) to be recorded. In order to confirm proper reception, turn on the TV set and select the video playback channel (AV).



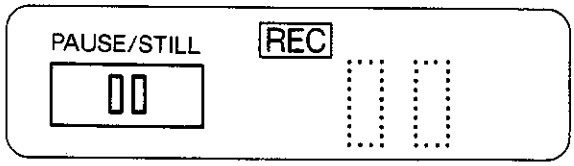
② Press the Record Button (●).



When a video cassette with broken out tab is inserted, it will be automatically ejected.

- During recording, the programme position (channel) on the VTR cannot be changed.

③ Press the Pause/Still Button (❚❚) to stop the tape temporarily. Programme position (channel) can be changed, if desired.



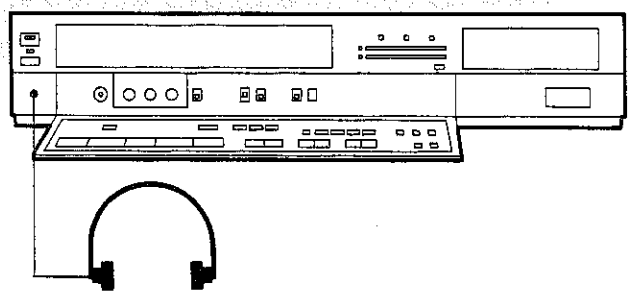
- Press the Pause/Still Button (❚❚) again to continue the recording.
- If you leave the VTR in the pause mode for more than 5 minutes, the VTR will automatically switch over to the stop mode to protect the tape and the video heads.

④ Press the Stop Button (■).

You can watch one programme on the TV while recording another on the VTR.

1. Record (following steps ① and ②).
2. Press the VTR/TV Selector to "TV" position.
   For the NV-H65BA no selector is fitted.
3. Select the desired programme position (channel) on your TV set.

HI-FI AUDIO SYSTEM



Headphones
(Optional)

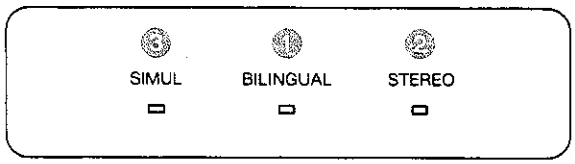
Headphones Output Level Control
When using headphones, the volume level can be adjusted with the Headphones Level Control.

HI-FI RECORDING

There is no special operation required; it is the same as for normal TV programme recording described on page 17. Recording of stereo and bilingual programmes is controlled automatically. It is not necessary to preselect any audio tracks.

① When a bilingual programme is received, the "Bilingual" indicator lights up.

② When a stereo programme is received, the "Stereo" indicator lights up.



HI-FI PLAYBACK

Preparation
- Connect your VTR to the Stereo Amplifier and FM Stereo Tuner as described on page 8.
- Tune the FM Stereo Tuner to the desired station.

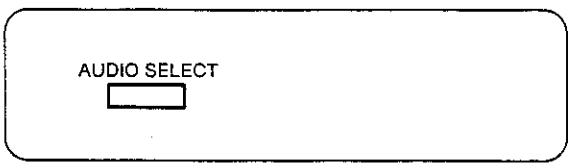
③ Set the Input Signal Selector to "Simul".
The "Simul" indicator lights up.
- The operation procedure is the same as for normal recording; see "Recording from a TV broadcast signal" on page 17.
With this switch in the "simul" position, the sound portion of the TV broadcast signal will be recorded only on the "normal" sound track. And the stereo sound signal received via the FM tuner will be recorded on the hi-fi sound tracks.

AUDIO PLAYBACK MODE SELECTION

Press the Audio Playback Mode Selector to select the desired sound mode.
At the every push of this button, the audio playback mode changes as follows:

→Stereo→Left→Right→Normal audio track→

and the Left and Right Indicators show which sound mode is selected in the following way.
Stereo: Both the Left and Right Indicators are lit.
Left: The Left Indicator is lit.
Right: The Right Indicator is lit.
Normal: Both the Left and Right Indicators are not lit.

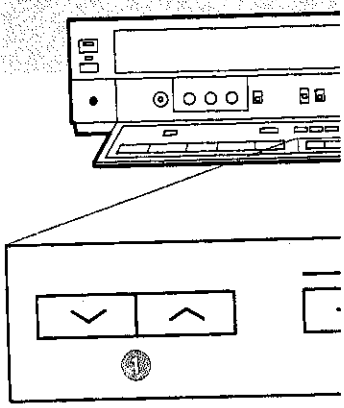


- If a video cassette recorded on a conventional VHS stereo video recorder is played back on this VTR, the sound reproduction of a stereo programme will be in mono. In case of a recorded bilingual programme, both language versions are reproduced mixed together (and are therefore not intelligible).

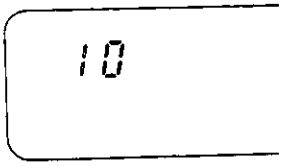
Audio Playback Mode / Sound Track Indicators	Playback of Programmes Recorded on the NV-H65 (or another VHS HI-FI Video Recorder)		Playback of Programmes Recorded on a Conventional VHS Stereo Video Recorder	
	Stereo Programmes	Bilingual Programmes	Stereo Programmes	Bilingual Programmes
STEREO	Left+Right Channels (Stereo)	CH1 from Left CH2 from Right	——	——
LEFT	Left Channel	Channel 1 (Main)	——	——
RIGHT	Right Channel	Channel 2 (Sub)	——	——
NORMAL	Mono	Channel 1 (Main)	Left+Right Mixed	CH1+CH2 Mixed

SUPER OTR FU
(ONE-TOUCH TI
RECORDING)

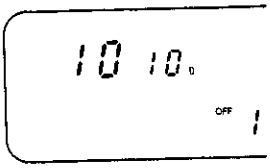
This convenient function makes
gramme the VTR for recording
immediate start or with start wit
starting time and ending time pr
the VTR will automatically turn it
ends.



1 Select the programme pc
corded.

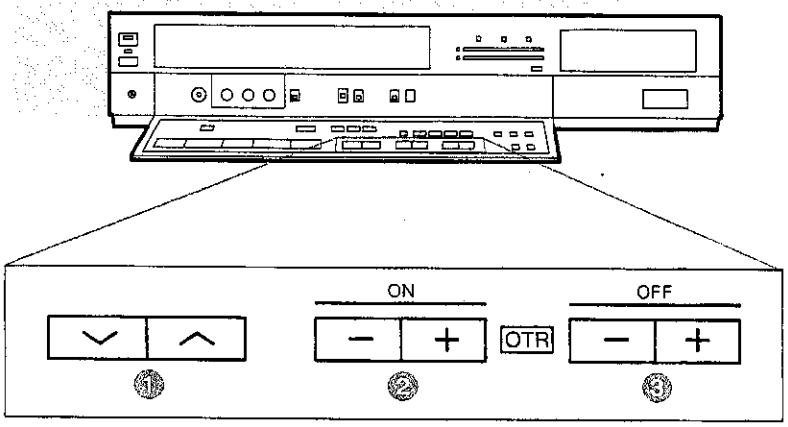


2 Set the desired ending ti
OTR Off (+) or (−) Buttor
time is 9:05, and the endir
is 10:00.)



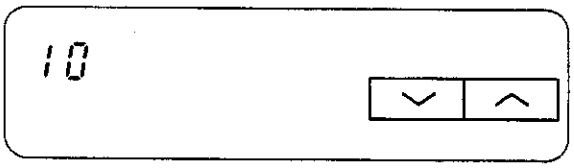
When the tab of the inse
out, it will be automatic

- The "OTR" indicator will b
- The VTR will automatically
completed. To turn the VT
On/Off Switch.

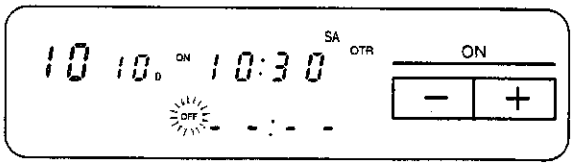


It is possible to programme an OTR recording for a TV programme which will start immediately or within the next 24 hours.
(For example, OTR recording of a TV programme broadcast from 10:30 to 11:00.)

1 Select the programme position (channel) to be recorded.

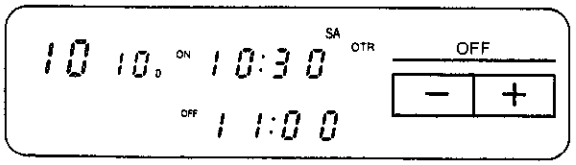


2 Press the OTR On (+) or (−) Button to set the OTR starting time to 10:30.



- The "OTR" indicator will be displayed.

3 Press the OTR Off (+) or (−) Button to set the OTR ending time to 11:00.

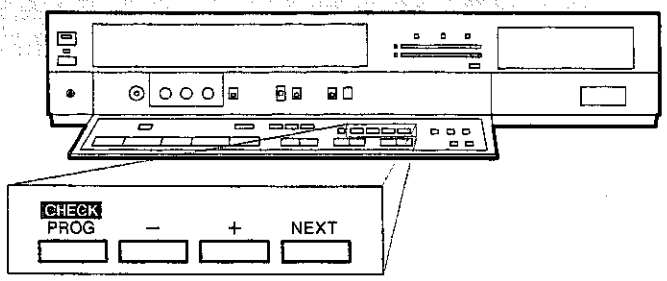


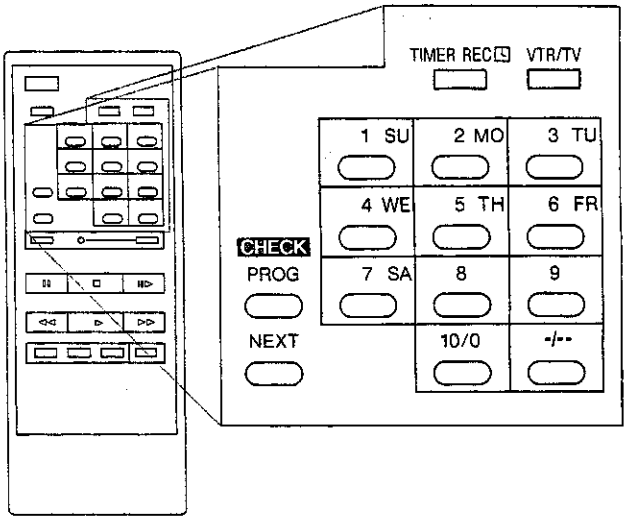
- After setting the OTR starting time in step 2, the OTR Off (+) or (−) Button must be pressed within 8 seconds to select the OTR ending time, otherwise the selected starting time will be cancelled.
- The VTR will automatically switch off, when the OTR is completed. To turn the VTR on again, press the VTR On/Off Switch.

- Make sure that the OTR Function (One-Touch Timer Recording) does not overlap a programmed timer recording. An OTR always takes precedence over a timer recording.
- If you want to confirm the present time or the tape counter position before the programmed OTR is performed, or to check the tape counter position during the OTR, press the Check/Programme Button. To return the display to the previous indication, press this button once more.
- It is possible to change the OTR starting time before the recording starts.
- It is possible to perform any VTR operation (except Timer Recording) before the recording starts.
- It is possible to change the OTR ending time even during the recording.
- To interrupt an OTR, press the VTR On/Off Switch to turn the VTR off.
- When quickly and repeatedly pressing the OTR On (+) or (−) Button or the OTR Off (+) or (−) Button, the corresponding time indication changes in 1-minute steps. When it is kept pressed, the indication changes in 10-minute steps.

TIMER RECORDING

The programming of timer recordings is possible both on the VTR itself and via the remote control unit.





The Timer Recording Buttons (Check/Programme, Next, Timer Record) of the Remote Controller have the same functions as the Check/Programme, Next, Timer Record Buttons on the VTR. Therefore, instead of using the (+) and (–) Buttons on the VTR, the Timer Recording & Programme Position Selector Buttons of the Remote Controller can be used to programme timer recordings.

How to Select the Programme Position (Channel)

select channel	press button	
1–9	1 SU – 9	respective channel
10	10/0	
11–16 for example 12	-/-- – 1 SU – 2 MO	

If more than 5 seconds pass between the first, second and third push, the channel will not be changed normally.

How to Set the Date and the Starting & Ending Times for Timer Recordings

The date and time can be set by directly pressing the number buttons (1 SU~10/0). When two buttons have to be pressed (for example, when setting the date to a day of the month between 11 and 31, the hour between 11 and 23, the minute between 11 and 59), the second button must be pressed within 2 seconds after pressing the first button.

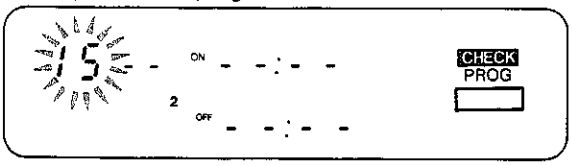
Preparation

- Make sure that the clock shows the present time correctly.
- Insert a video cassette with the erasure prevention tab intact.
  When a video cassette is already inside the VTR, press the VTR On/Off Switch to turn it on.
- Make sure that the "Timer Record" is not switched On.
- Set the Input Signal Selector to "Tuner".

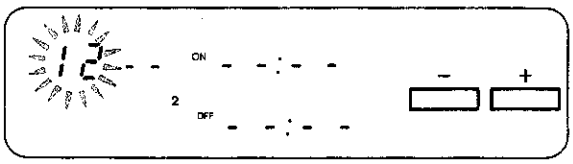
For Example:

Programming a timer recording for a TV programme that will be broadcast on Wednesday, October 28, from 20:00 to 22:45, on programme position (channel) 12, on timer programme number 2. (Present date=October 10, 1987)

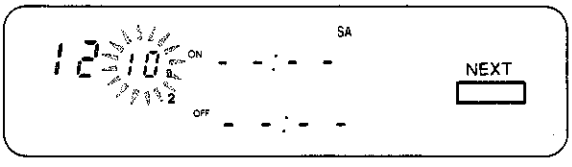
1. Press the Check/Programme Button to select the next unoccupied timer programme number.



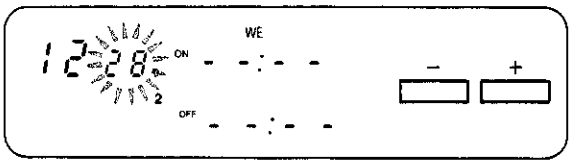
2. Press the (+) or (–) Button to select the programme position (channel) on which the TV programme will be broadcast.



3. Press the Next Button.



④ Press the (+) or (−) Button to set the date.

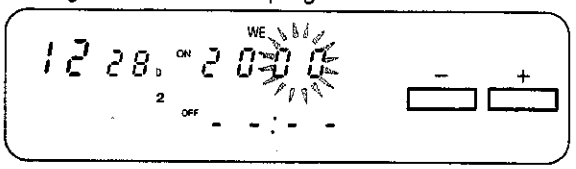


⑤ Press the Next Button.

⑥ Press the (+) or (−) Button to select the hour of the starting time of the TV programme.

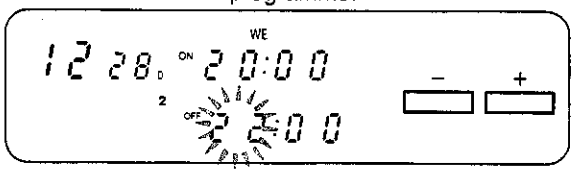
⑦ Press the Next Button.

⑧ Press the (+) or (−) Button to select the minute of the starting time of the TV programme.



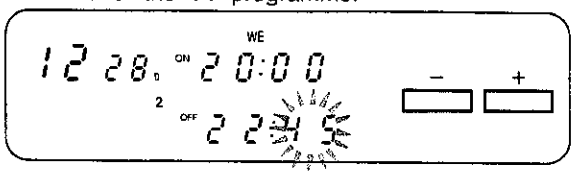
⑨ Press the Next Button.

⑩ Press the (+) or (−) Button to select the hour of the end time of the TV programme.

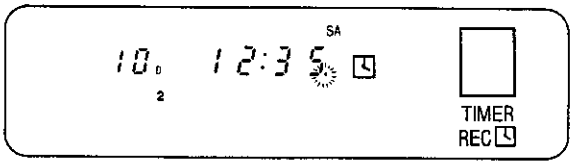


⑪ Press the Next Button.

⑫ Press the (+) or (−) Button to select the minute of the end time of the TV programme.



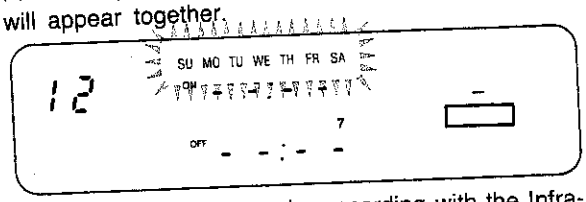
⑬ Press the Timer Record Button.



For example:
Programme time for timer recording every day from 20:00–22:45 on timer programme number 7.
Programming for everyday recording can be made on any of the timer programme numbers 1–7.

Execute the operation steps ⑨ to ⑮ as described on page 21.

⑯ Press the (−) Button once, so that all day indications will appear together.

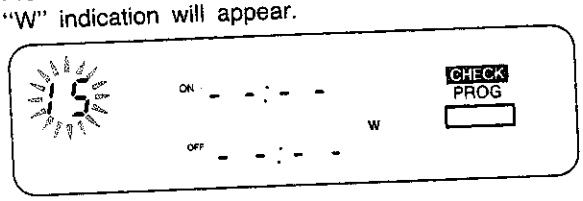


When programming an everyday recording with the Infra-red Remote Controller, press the 10/0 key twice to make all day indications appear together.

Perform the operation steps ⑰ to ⑳ described on page 22.

For example:
Programming a timer recording for a TV programme that is broadcast every week on Sunday, from 20:00 to 22:45.

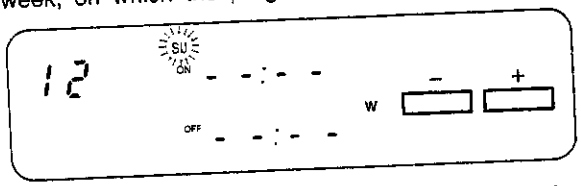
① Press the Check/Programme Button 8 times, so that "W" indication will appear.



② Press the (+) or (−) Button to select the programme position (channel) on which the TV programme will be broadcast.

③ Press the Next Button.

④ Press the (+) or (−) Button to select the day of the week, on which the programme will be broadcast.

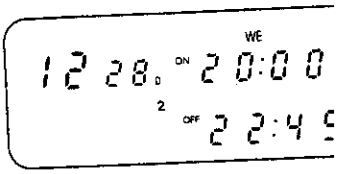


When programming an everyweek recording with the infra-red Remote Controller, press any of 7 keys (1 SU~7 SA) to select the day of the week.

Perform the operation steps ⑰ to ⑳ described on page 22.

—Make sure that the VTR is turne
—Make sure that the Timer Record B

Select the programme number to be c
ly pressing the Check/Programme
The preset channel and start and en
recording will be indicated for abou



Make sure that:
—the VTR is turned on,
—the Timer Record Button is set

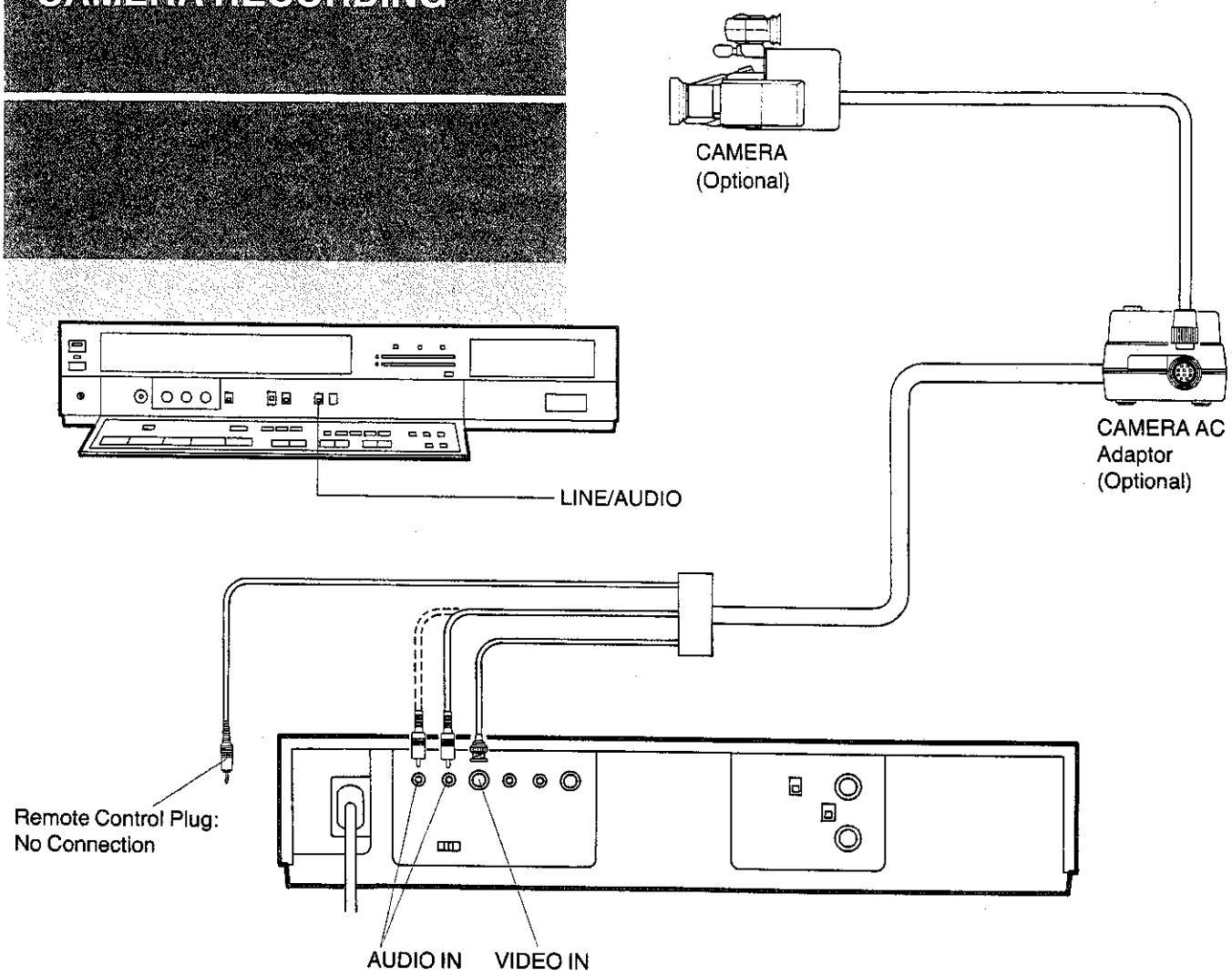
⑬ Press the Check/Programme
the number of the timer progr
cancel is displayed.

⑭ Press the (+) and (−) Button
than 3 seconds.

•Timer recording programmes ca
Remote Controller.

•It is impossible to confirm
recordings while an OTR i
•To turn the VTR on and
recording before the timer
turn the Timer Record Bu
•When the Timer Record But
video cassette is inserted o
been programmed, the Tir
will flash to inform that th
be performed.
•After the programmed tim
made, set the Timer Re
otherwise the VTR canno
•During recording, the progr
on the VTR cannot be c
•When you want to watch
recording, select the desire
•To cancel a timer record
the Timer Record Button

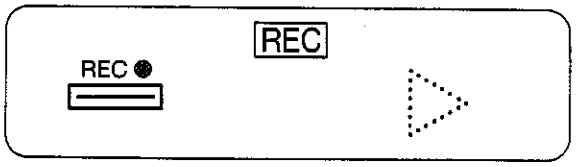
CAMERA RECORDING



Preparation

- Connect the video camera via the Camera AC Adaptor to the VTR as shown in the illustration above.
- Insert a video cassette with the erasure prevention tab intact. When a video cassette is already inside the VTR, press the VTR On/Off Switch to turn it on.
- Set the Input Signal Selector to "Line/Audio".
- Press the VTR/TV Selector to "VTR" position. For the NV-H65BA no selector is fitted.

1. Turn the Camera AC Adaptor on and make the necessary adjustments on the camera. Refer to the operating instructions of the camera you are using.
2. Press the Record Button (●) on the VTR to start recording.



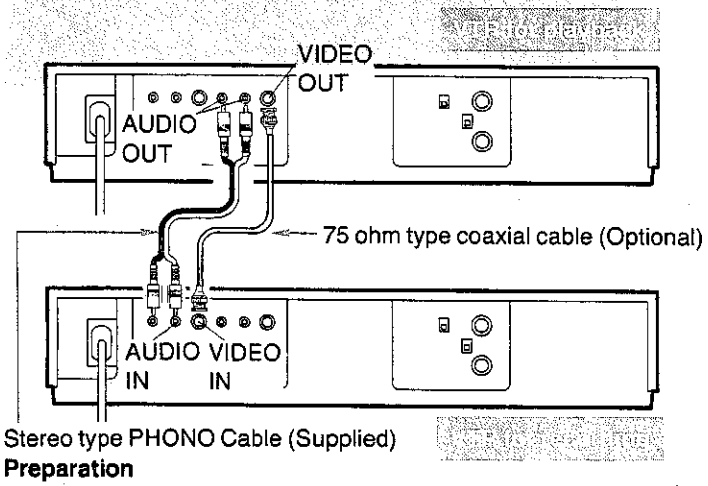
Avoid recording unwanted material:
Press the Pause/Still Button (❚❚) of the VTR, and the recording will stop temporarily. To restart recording, press the Pause/Still Button (❚❚), again.

3. Press the Stop Button (■) on the VTR to stop the recording.

- For playback of a tape that was recorded via a camera, select the audio track on which the sound from the camera microphone was recorded by pressing the corresponding Audio Playback mode Selector Button.
- If you leave the VTR in the pause mode for more than 5 minutes, the VTR will stop automatically to protect the tape and the video heads.
- Even if the video camera is equipped with video recorder remote control functions, this VTR can not be remotely-controlled from the camera.

DUBBING (COPYING)

Dubbing (copying) from one video cassette to another

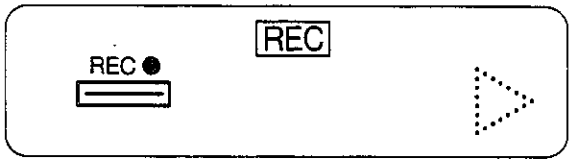


Stereo type PHONO Cable (Supplied)

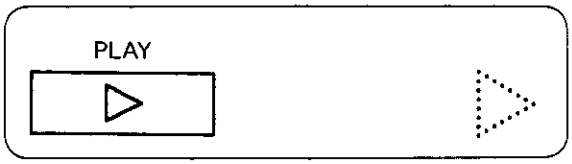
Preparation

- Press the VTR On/Off Switches to turn both VTRs On.
- Set the Input Signal Selector to "Line/Audio". (Recording VTR)
- Connect the Audio Output Sockets on the playback VTR to the Audio Input Sockets on the recording VTR with a stereo type PHONO cable.
- Connect the Video Output Socket on the playback VTR to the Video Input Socket on the recording VTR with a 75 ohm type coaxial cable (BNC connector).
- Make sure that the Edit Switches of both the recording and playback VTRs (if equipped) are in the "On" position. Set these switches to "Off" for ordinary use of the VTRs. (The Edit Switch is on the front panel.)

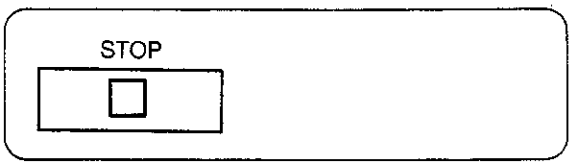
1. Place the recorded cassette in the playback VTR and a blank video cassette with the erasure prevention tab intact in the recording VTR.
2. Press the Record Button (●) on the recording VTR.



3. Press the Play Button (▶) on the playback VTR.

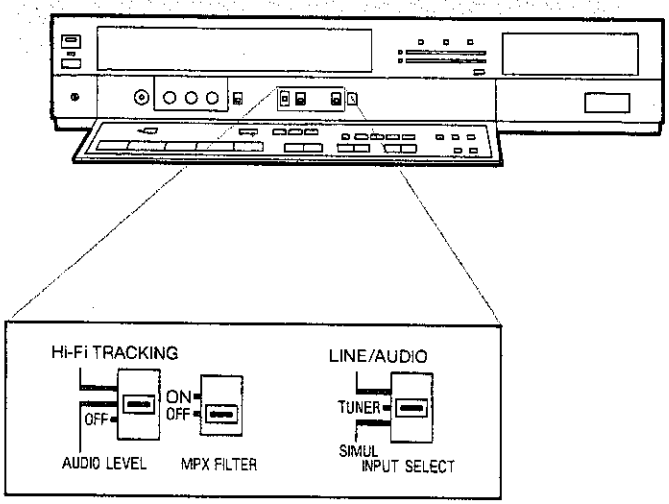


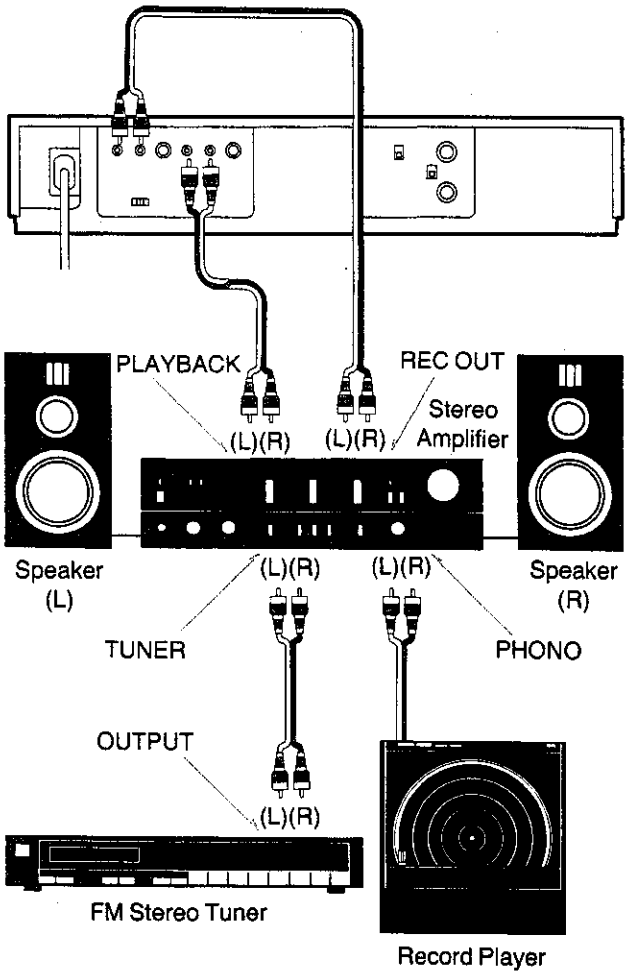
4. Press the Stop Button (■) on both VTRs to stop the dubbing.



- To assure smooth, noiseless cuts when interrupting the recording, always use the Pause/Still Button (❚❚).
- To obtain smooth cuts when starting the recording from the stop mode:
  1. Play back the last part of the previously recorded material to confirm its ending point, and then press the Pause/Still Button (❚❚).
  2. Press the Record Button (●). (The VTR is still in the pause mode.)
  3. To start recording, press the Pause/Still Button (❚❚) again.
- The picture quality of a re-recorded tape is not as good as that of the original.
- To dub from a Hi-Fi VTR to a conventional Mono VTR, press the "Audio Playback Mode Selector Button" repeatedly until the "Left" and "Right" audio playback mode indicators go out.

USING THE NV-H65 AS A HI-FI AUDIO RECORDER





Preparation

- Connect the VTR to the hi-fi audio system. (Example of a connection diagramme is shown).
- Insert a video cassette with the erasure prevention tab intact.
  When a video cassette is already inside the VTR, press the VTR On/Off Switch to turn it on.
- Switch on the hi-fi audio system and select an audio source.

Note: Selection of an audio track is not necessary for recording.

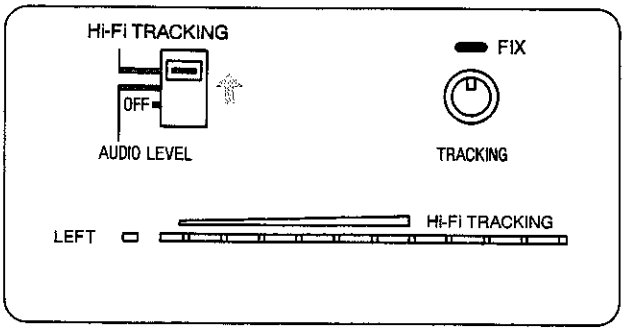
Set the Input Signal Selector to "Line/Audio".

- To start the recording, press the Record Button (●).

To achieve smooth transitions between adjoining recordings, see notes on page 25.

- To start the playback, press the Play Button (▶).
- Press (for playback of both mono and stereo recordings) the "Audio Playback Mode Selector Button" repeatedly so that the "Left" and "Right" Audio Track Indicators light up.

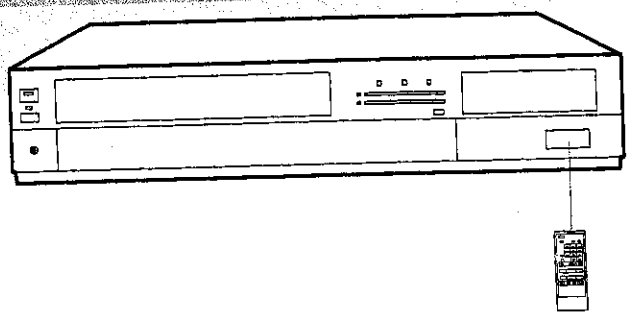
This adjustment may be necessary when playing back a tape which was recorded on another hi-fi VTR.
Set the Audio Level Meter Selector to "Hi-Fi Tracking" and slowly rotate the Tracking Control while observing the Audio Level Meter, for highest possible meter indication.

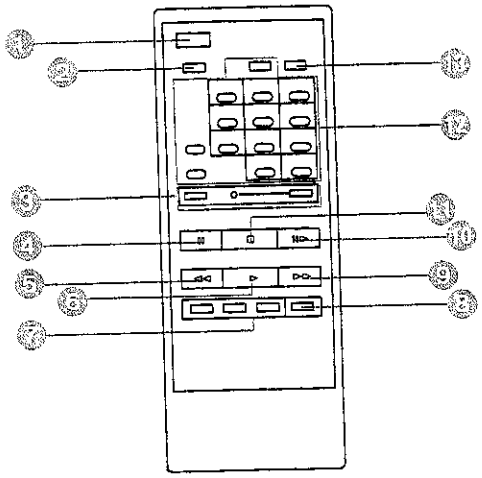


- The audio level meter on this VTR is a "Peak-Hold" type.
- If the sound is impaired by high frequency distortion when recording from an FM tuner, set the MPX Filter switch to "On". If there is no distortion when recording from an FM tuner, and for all other recordings, set this switch to "Off".

PROGRAMMABLE REMOTE CONTROLLER (INFRA-RED)

Part Number: VEQ0508 (NV-H65A, EA)
VEQ0516 (NV-H65BA)





① **VTR On/Off Button**

② **Audio Select Button**

③ **Record Buttons (●)**
To start recording, press the both buttons simultaneously.

④ **Pause/Still Button (❚❚)**

⑤ **Rewind ◀◀/Review ⏪ Button**

⑥ **Play Button (▶)**

⑦ **Slow Buttons**

⑧ **Double Speed Playback Button (×2)**

⑨ **Fast Forward ▶▶/Cue ⏩ Button**

⑩ **Still Advance Button (❚▶)**

⑪ **Stop Button (■)**

⑫ **Timer Recording & Programme Position Selector Buttons**
The programming of timer recordings is possible by using these Timer Recording & Programme Position Selector Buttons. For details about the operation, refer to "Timer Recording" on page 21.

⑬ **VTR/TV Selector**
For the NV-H65BA no selector is fitted.

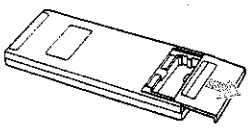
Power Source for the Infra-red Remote Controller

■ The Infra-red Remote Controller is powered by two "R6" size batteries. The life of the batteries is ab one year, however, it depends on the frequency of Inspect and if necessary, replace the batteries onc year.

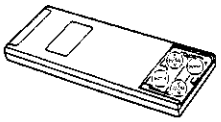
CAUTION FOR BATTERY REPLACEMENT

- Load the new batteries with their polarities (⊕ and aligned correctly.
- Do not apply heat to batteries, or internal short-circuit occur.
- If you do not intend to use the Remote Controller for a period of time, remove the batteries and store them cool and dry place.
- Remove spent batteries immediately and dispose of t
- Do not use an old and a new batteries together. never use an alkaline battery with a manganese batt

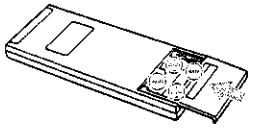
Load the batteries as follows:



① Remove the battery partment lid.



② Place two batteries battery compartmer indicated inside the tery compartment.



③ Replace the lid.

Note:

- The infra-red beam should be transmitted directly Infra-red Remote Control Receiver on the front VTR.
- Direct sunlight may interfere with the beam.
- The lightsensing angle of the Infra-red Remote C Receiver window in the VTR is about 40°.
- The unit should be used within a range of about 7 from the front of the VTR.

BEFORE REQUESTING SERVICE

Before requesting service, check the following points once again.

SYMPTOM	CAUSE	REMEDY
Power doesn't turn on.	Mains lead is not connected.	Connect mains lead to mains outlet.
	The Timer Record Button is set to "On".	Set the Timer Record Button to "Off".
Power is on but unit doesn't operate.	Dew condensation inside the VTR.	Wait until the Dew Indicator " $\mathcal{d}$ " goes off.
	Safety devices are operating.	Turn off the VTR On/Off Switch, disconnect mains cord from outlet, then reconnect mains cord to mains outlet and turn on the VTR On/Off Switch again.
TV programmes cannot be recorded.	Connection of aerial lead is not correct.	Connect aerial lead correctly.
	Reception channel is not properly tuned.	Tune reception channel.
	The Input Signal Selector is not set correctly.	Set the Input Signal Selector to "Tuner".
OTR Function (One-Touch Timer Recording) cannot be performed.	Clock is flashing "0:00".	Set clock to present time.
Unattended timer recording cannot be performed.	Recording start or recording stop time setting is incorrect.	Set recording start and recording stop time correctly.
	The Timer Record Button is set to "Off".	Set the Timer Record Button to "On".
	Clock shows incorrect time.	Adjust clock to present time.
	Clock is flashing at "0:00".	Set clock time and perform timer setting.
	The Input Signal Selector is not set to "Tuner".	Set the Input Signal Selector to "Tuner".
Unattended timer recording cannot be programmed.	The OTR is now being performed.	Programme the timer recording after the OTR has finished.
If you attempt to carry out Recording, Timer Recording, or OTR, the cassette will be automatically ejected.	Accidental erasure prevention tab on the cassette is broken out.	Cover tab hole with adhesive tape.
Recording via external input terminals cannot be performed.	The Input Signal Selector is not set correctly.	Set the Input Signal Selector to "Line/Audio".

SYMPTOM	CAUSE	REMEDY
Playback picture is not reproduced.	Connection with television set is not correct.	Connect the VTR to the television set correctly.
	TV set is not tuned to the video playback channel.	Tune TV set to the video playback channel of the VTR.
Recorded programmes with two-channel sound (stereo or Simulcast) can not be played back.	Setting of the Audio Playback Mode Selector Button is not correct.	Press the Audio Selector Button to select the desired audio playback mode. (See page 18)
	Hi-Fi tracking is misaligned.	Precisely align the tracking of the hi-fi sound track.
Playback picture is not in colour. Playback picture has large amounts of "snow".	Reception channel was not adjusted correctly during recording.	Readjust reception channel correctly.
	TV set is not properly tuned to the video playback channel of the VTR.	Properly tune the TV set to the video playback channel of the VTR.
	The video heads are clogged with dirt.	Consult qualified service personnel.
	The video heads are abraded.	Consult qualified service personnel.
	Tape is old and/or defective.	Use new tape.
Remote Controller does not work.	Remote Controller is not being pointed at Infra-red Receiver window on the VTR.	Point the Remote Controller at Infra-red Receiver Window on the VTR.
	Distance is too far.	Use the Remote Controller within 7 m from the VTR.
	An obstacle is between Remote Controller and VTR.	Remove obstacle.
	Batteries are exhausted.	Replace batteries.
	Battery polarities (+, −) are reversed.	Insert batteries correctly.

CAUTIONS

Please read these cautions before you operate this VTR.

If the VTR is suddenly moved from a cold place to a warm place, moisture may form on the tape and inside the VTR. In this case, the Dew Indicator " $\mathcal{d}$ " will flash on and off and the VTR will not operate.

Avoid places where there is high humidity or much dust, which may cause damage to internal parts.

The ventilation holes prevent abnormal increase in temperature. Do not block or cover these holes. Especially avoid covering the holes with soft materials such as cloth or paper.

Keep the VTR away from extreme direct heat such as direct sunlight, heating radiators, or closed automobiles.

Never bring a magnet or magnetized object near the VTR because it will adversely affect the performance of the VTR.

Touching internal parts of this VTR is dangerous, and may cause serious damage to the VTR. Do not attempt to disassemble the VTR. There are no user serviceable parts inside.

Keep the VTR away from flower vases, tubs, sinks, etc. CAUTION: If liquids are spilled into the VTR, serious damage could occur. If you spill any liquid into the VTR, consult qualified service personnel.

Wipe the VTR with a clean, dry cloth. Never use cleaning fluid, or other chemicals. And do not use compressed air to remove dust.

Place the VTR in a horizontal position, and do not place anything heavy on it.

The video heads are the means by which the recorder places picture signals on the tape during recording, and reads picture signals from the tape during playback. If these heads become dirty and clogged from long use, the signals can no longer be recorded correctly, and the playback picture will be distorted accordingly. This is the case, for example, during the playback of a tape, the sound is reproduced normally, but no picture is seen, or the picture is greatly distorted. When such a symptom case occurs have the recorder checked by qualified service personnel.

Condensation may form in the VTR if:

- The VTR is in a room where the heater has just been turned on.
- The VTR is in a room with steam or high humidity.
- The VTR is brought from cold surroundings into a well-heated room.
- The VTR is suddenly brought from cool surroundings, such as an air-conditioned room or car, to a place which is hot and humid.

When dew forms in the VTR: (Refer to page 5)

The Dew Indicator " $\mathcal{d}$ " on the Multi-Function Display will flash on and off and all the function buttons are made non-operational to protect the tape and the video heads.

When the Dew Indicator flashes, wait until this indicator disappears.

SPECIFICATIONS

NV-H65A, EA, BA

Power Source:	NV-H65A: 240 V AC 50–60 Hz NV-H65EA: 230 V AC 50–60 Hz NV-H65BA: 110–240 V (AUTO VOLTAGE) AC 50–60 Hz
Power Consumption:	NV-H65A, EA: Approx. 28 watts NV-H65BA: Approx. 27 watts
Video Recording System:	2 rotary heads, helical scanning system
Tape Speed:	23.39 mm/sec.
Tape Format:	VHS tape
Record/Playback Time:	240 min. with NV-E240
FF/REW Time:	Less than 5.5 min. with NV-E180

VIDEO

Television System:	CCIR: 625 lines, 50 fields, PAL colour signal	
Modulation System:	Luminance: FM azimuth recording Colour signal: converted subcarrier phase shift recording	
Input Level:	VIDEO IN (BNC); 1.0 Vp-p,	75 ohm, unbalanc
Output Level:	VIDEO OUT (BNC); 1.0 Vp-p,	75 ohm, unbalanc
	RF Modulated; NV-H65A: VHF channel 0 or 1,	75 ohm, unbalanc
	NV-H65EA: VHF channel 2 or 3,	75 ohm, unbalanc
	NV-H65BA: UHF channel 36 (±4),	75 ohm, unbalanc

AUDIO

Input Level:	AUDIO IN (PHONO); −10 dB,	more than 50 kohm, unbalan
Output Level:	AUDIO OUT (PHONO); −8 dB,	less than 1 kohm, unbalan
	HEADPHONES; −30 dB,	8 ohm
Audio Track:	1 track (Normal-mono only), 2 channels (Hi-Fi sound-stereo)	
Video Horizontal Resolution:	Colour: more than 240 lines	
Signal-to-Noise Ratio:	Video; more than 43 dB	
Dynamic Range:	Audio; more than 90 dB (Hi-Fi audio track)	
Audio Frequency Response:	20 Hz–20 kHz (Hi-Fi audio track)	
Wow and flutter:	0.005% Wrms/Hi-Fi	
Operating Temperature:	5°C–40°C	
Operating Humidity:	35%–80%	
Weight:	6.0 kg	
Dimensions:	430 (W)×82 (H)×352 (D) mm	
Standard Accessories:	1 pc. DIN-DIN coaxial cable 1 pc. Programmable remote controller (Infra-red) 2 pcs. Stereo type PHONO cable 1 pc. AC Mains Lead	

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka, Japan

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